BACKGROUND OF THE INVENTION

Over the past 20 years, the Internet has moved from being a pioneering link between universities and colleges to an integral part of everyday life, both within the home and outside. The ability to link people electronically has allowed a remote part of the world to

5   share information and communication in real time. Access to the Internet and information communication technology has refined the way people conduct their day-to-day business and their lives. The ability to communicate of their network and to share information between people thousands of miles apart has permitted collaboration and dissemination of data on a scale never before achieved.

10   With the surge in connectivity have also come questionable applications of the linkage. Whereas once parents could screen mail delivered to their front door and teachers could exercise some control over the information flow to their students, desktop computers have provided open access to both the home and the school. Regular e-mail and open access chat rooms are generally not secure. Spam is a regular and generally unwanted

15   addition to most e-mail accounts. Although there are some screening tools and blockages, such as Zwaller, Prontomail, and JustSafe Filtered Email, that can be employed to try to regain control over the flow of information, and free one class/one teacher services such as Gaggle.net, they are not adequate to the task.

The sharing of information between students in a collaborative environment has been an

20   educational goal since the first teachers promoted the first pen-pals. The greater is the number of participants, the more enriched is the discussion and concomitant learning experience. The creation of a "shared learning" environment and relationships among the participants over the Internet carries with it the need to create a secure "virtual

classroom" in which the teacher is still the person responsible for the children's intellectual well-being. This responsibility requires monitoring and filtering of the transmitted information without making the system onerous to either the monitor (teacher) or the students.

5   <u>DESCRIPTION OF THE METHOD AND SYSTEM</u>

The method and system for monitoring and filtering of electronic data transmission (SafeMail) permits the creation of a secure "virtual classroom" through which teachers can use the Internet to link their students to other classes to work collaboratively and create a "shared learning" environment. A community is formed by having a teacher who

10   is interested in participating in collaborative education submit preliminary educational data to a central data storage center. The data generally contains a description of the class, age of the students, language information, number of participants and project interests. A first filter system is employed ascertain and control the entrance of class data in order to ensure that entering party (teacher) is actually a teacher and that they are duly

15   authorized to monitor the students. Once a teacher is validated, the class-specific material is entered into the community creation database, along with any project specific inquiries. The data is then compiled and stored.

The teacher creates a monitored account for each of the students. Each account is under the control of the teacher for all purposes, the information coming into each account is

20   filtered through a multi-level security filter that defines different levels of control. The teacher can set the control level based upon student related criteria (age, sex, maturity,

etc.). This permits the teacher to define the degree of filtration and the degree to which each student is being monitored.

Once the teacher's class is accepted into the data storage system, a search engine permits the teacher to search anywhere within the data storage system's world of classrooms for

5   compatible classrooms. The teacher can, using the search engine, plan collaborative Internet activities in a "shared learning" context. They can permit the students to go "on-line" to link to other classes to work collaboratively to further enrich any topic they are learning. By permitting teachers to create the student accounts, it allows the creation of a large on-line student/teacher community with multiple classrooms.

10 The dynamic filtering permits security to be controlled from a centralized location and ties the individual classrooms into a network. The filtering level component permits each classroom within the network to be monitored to a degree that is teacher-designated and appropriate for the students. The system is designed to permit an accepted teacher to receive a copy of messages that are sent or received in a student's account. The flagging

15 filter component of the system will scan each message sent or received for words that are on a master flagged word list. If a word on the master flagged word list is found in the message, the message is routed to the teacher's account and will not be released until the teacher has reviewed it and authorized its delivery or transmittal.

Another filtering component permits the centralized location to monitor all

20 communications designated for a discussion board before the communication is posted. This dynamic filtering system also can be teacher designated and employs a master flagged word list. However the monitoring function is centralized and the teacher is not burdened with having to review flagged messages for posting. In the even there is a

flagged message which is not appropriate for posting, the message is routed to the teacher for appropriate action regarding the originating student.

Another important aspect of the dynamic filtering system is that attachments are also reviewed in order to control any improper transmittal of data to a student. Because 5 attachments can be compressed, encrypted, or in unrecognizable formats, the filtering system flags any attachment to allow the monitor to assess whether it contains inappropriate material.

The centralized filtering system permits coordination of filtration between members in a community, revision by teacher of monitoring criteria, and implementation of those 10 revisions. Creation of additional accounts for students in order to permit multiple access and different levels of filtration and unique community building within the overall network.

EXAMPLE APPLICATIONS

The applications for SafeMail go beyond simple interaction between two individuals or 15 even two groups of individuals. This technology can provide collaboration on projects or the actual creation of multi-national, multi-group interactions with additional information and participation as well as temporal extensions of projects. Educational tools can be proliferated and employed to create "shared learning" and projects can be created by one group or multiple groups to permit peer activities. SafeMail can launch an application 20 which would permit extensions of the project which could be part of the underlying database or could interact to search for similar projects and thus create new entrants into the initial groups. SafeMail can also be employed, through the teacher monitoring, with

both time-sensitive and extension of project sensitive information. For example, a project relating to the currencies of nations could be extended by providing time-sensitive data as to activities by central banks and the U.S. Federal Reserve Board which the students could then factor into their projects to see the immediate effects thereof.

5   SafeMail would always, however, filter the information being received so that there would always be the level of monitoring by the teacher that would keep the interaction safe for the level of student involved, Additionally, where there are multiple levels of student, the filtering can be set by the teachers involved such that upper level students can obtain more varied information with less filtration, while younger students involved in

10   the same project will not necessarily see that same information.

Example 1:

The applications for the secure, monitored SafeMail system go beyond the simple transmittal of an e-mail between two students. This system can provide projects for collaborative implementation and modify the project parameters depending on teacher

15   designated criteria, while maintaining the essential filtration and monitoring aspects of the system. The system can record a log of the recipients of the messages and this log can be used to assist the monitor in determining if there may be inappropriate activities being engaged in (e.g. Multiple late night transmittals, storage of large files, etc.).

Example 2:

20   SafeMail can permit an interactive project designed to illustrate the different values of currency and cost of living in countries around the world. A participant is invited to register for the project, after which they are asked to answer a series of questions about

the cost of various projects and services in their country. Participants answer in their local currency. In viewing the results, users see the average value entered for participant s in each country both in their own currency and in the original currency entered by the user. This permits a true comparison of the prices of the projects and services surveyed.

5 ## Example 3:

The system can be employed in conjunction with a project that is deigned to allow participating classrooms to compete in a series of physical challenges and compare their results with those of their peers. Results are entered into the project interface, tabulated, and ranked.

10 ## Example 4:

The system can be used to create, host and moderate an interactive Online Book Club as a resource for the online educational community. This Book Club can provide a focus of discussion for students and teachers around the world on the topics of literature in the classroom and literacy. The system can also provide sponsors with the opportunity to

15 promote their products and authors to teachers and students in an educationally sound and safe manner.

Example 5:

The system can be used to permit students and teachers to gain access to experts in various areas and different countries. A project such as "Ask an Expert" is a unique

20 gathering of technology, communication platform, language capability and community

that brings experts in various curricula safely into classrooms around the world. This model includes the following elements:

targeted invitations sent to likely participants in the project;

custom project information pages

5   moderated discussion forum to facilitate communication exchanges

"expert" participation in the forum

METHOD OF OPERATION

A teacher creates a profile of both the class and the users within that class. The profile is globally accessible and is intended to describe a teacher's class and the type of class with

10   whom they may be intersected in communicating. The teacher has the option of making the profile public or not.

A submitted profile, either of the teacher, the class or the project participation , is then screened and, if approved, is permitted to go "live" and become part of the global community. In the even that a profile is submitted through a third-party verification

15   source which approves the profile, it can go live immediately upon submission to the community. In the even that the profile is submitted "on-line", it is screened prior to community incorporation to verify that it is a proper part of the community being created. This screening prevents non-teachers from infiltrating the community. It curtails inappropriate, non-teacher generated project, prevents advertisers or other non-

20   educational entities to get into the community and maintains the "shared learning" environment centered around classroom instruction and teacher monitoring.

The approved profile is assigned to an account which the teacher originator can then permit the students to access through sub-accounts, over which there is filtering an ultimate teacher monitoring. The user, once approved, can create multiple profiles and/or projects as well as multiple filtering levels. Each of the profiles need only contain a

5   subset of the information currently stored in the master class profile. The teacher can also designate that a given search be limited to the community indicated division and below, so as to maintain the relevance of the proposed project to the particular sub-community. If there is no search limitation, the default may be a global search of the entire community to determine the universe of available collaborative entities.

10   Once a search is completed, the user can contact the identified profiles to establish direct contact and manage the collaboration . The search-teacher and the located-teacher can create multiple profiles and projects, extend a particular project, allow students to have access to moderate and modify the profiles as the project develops while at the same time have control over the level and quality, in terms of verbiage, of information that the

15   students exchange. The students are able to write to their counterparts, who become their audience. The exchange of letters and concomitant information while the project is in progress will improve writing and stimulate interest in countries and cultures. As a corollary, the students are more likely to view the work less as "home work" or "school work" and more as an ability to communicate with other people around the world who

20   have both similar and different issues and problems. This will permit an exchange of points of view that is not often possible in the usually insulated environment of a local classroom.